C.   Remarks

The claims are 1 and 4-15, with claims 1, 8, and 11 being independent. The independent claims have been amended to further clarify the present invention. Support for this amendment may be found, for example, in the substitute specification at page 9, lines 2-25, and page 11, lines 15-20, as well as in Figs. 3 and 4.   No new matter has been added.   Reconsideration of the claims is expressly requested.

Claims 1, 4, 5, 8, and 11-13 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious from U.S. Patent Application No. 2005/0272169 A1 (Griffin) in view of U.S. Patent Nos. 5,229,297 (Schnipelsky) and 6,656,428 B1 (Clark).   Claims 6, 7, 9, 10, 14, and 15 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious from Griffin in view of Schnipelsky, Clark, and U.S. Patent No. 6,432,719 B2 (Vann).   The grounds of rejection are respectfully traversed.

Prior to addressing the merits of rejection, Applicants would like to briefly discuss some of the features and advantages of the presently claimed invention.   That invention is related, in pertinent part, to a biochemical reaction cartridge and to a method and system utilizing this cartridge.   The biochemical cartridge in accordance with the claimed invention includes a reaction portion with at least one blank reaction chamber and a solution storage portion, which is not superposed on the reaction portion when the cartridge is not in use.

The chamber is opened outward by a first-stage pushing of the valve stem with a tool needle (e.g., 13a in Fig. 4) to move the solution in the solution storage portion to the chamber, and is sealed up by a further second-stage pushing of the valve stem with the tool needle (see 13b in Fig. 5) (e.g., the needle has been turned upside down (page 11, lines 9-14)). The valve stem has a cut (e.g., 8 in Figs. 3 and 4), which permits air to communicate between the chamber and an outside of the chamber by the first-stage pushing. Thus, there is no need to additionally provide an air vent, so that the liquid can be smoothly supplied from the sealed liquid storage portion to the chamber. As a result of a combination of first-stage pushing with the tool needle and further second-stage pushing with the tool needle (e.g., the tool needle has been turned upside down), accurate supply and sealing can be achieved by simple pushing operations.

The Examiner acknowledged that neither Griffin nor Schnipelsky discloses the use of the needle that seals the solution storage portion. Instead, the Examiner has now cited Clark, which is said to disclose the use of a needle to puncture a partition membrane, and subsequently seal the created hole when the needle is moved to a second position. Clark is also said to discloses a sealant layer (Figure 4) provided around the needle that is capable of sealing the ruptured partition membrane when the needle is fully depressed (Figure 5B).

Applicants respectfully submit that Clark does not disclose or suggest a valve stem with a cut that permits the air flow as claimed. While Clark discloses a tool needle 24, this needle clearly does not contain a cut.

Vann cannot cure the deficiencies of the other references, as it also does not disclose or suggest a valve stem with a cut.   Thus, even if the teachings of all references could be combined, the resulting combination still falls short of the presently claimed invention.   Accordingly, whether considered separately or in combination, the cited references cannot affect the patentability of the presently claimed invention.

Wherefore, withdrawal of the outstanding rejections and expedient passage of the application to issue are respectfully requested.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100.   All correspondence should continue to be directed to our address given below.

Respectfully submitted,


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